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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/693,615

10/23/2003

Mark D. Peterson

IFC 369C

6466

23581

7590

02/07/2005

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EXAMINER

CRUZ, MAGDA

ART UNIT

PAPER NUMBER

2851

DATE MAILED: 02/07/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/693,615

Applicant(s)

PETERSON, MARK D.

Examiner

Magda Cruz

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 October 2003.
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-33 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☒ Claim(s) 19-27 is/are allowed.
6) ☒ Claim(s) 1-15 and 28-33 is/are rejected.
7) ☒ Claim(s) 16-18 is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☒ The drawing(s) filed on 23 October 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

RODNEY FULLER
PRIMARY EXAMINER

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 3/31/04, 5/13/04.
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☒ Other: IDS 11/8/04 & 12/27/04.

DETAILED ACTION

Drawings

1. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the “plurality of bumps has a different size than another one of the plurality of bumps” (claim 2), “plurality of bumps has a different size” (claim 3), “plurality of bumps is randomly distributed over the output side of the Fresnel lens” (claims 4, 7 and 11), “at least one of plurality of bumps has a different shape than another one of the plurality of the plurality of bumps” (claim 5), and “each of the plurality of bumps has a different shape” (claim 6) must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as “amended.” If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either “Replacement Sheet” or “New

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Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

2. In addition to Replacement Sheets containing the corrected drawing figure(s), applicant is required to submit a marked-up copy of each Replacement Sheet including annotations indicating the changes made to the previous version. The marked-up copy must be clearly labeled as "Annotated Sheets" and must be presented in the amendment or remarks section that explains the change(s) to the drawings. See 37 CFR 1.121(d)(1). Failure to timely submit the proposed drawing and marked-up copy will result in the abandonment of the application.

Claim Objections

3. Claims 16-18 are objected to because of the following informalities:
- a. Regarding claim 16, a table should not be included as part of the claim.
 - b. Claims 17-18 fall with parent claim.
- Appropriate correction is required.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1-15 and 28-33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kurematsu (US Patent Number 6,808,271 B1) in view of Goldenberg et al. (US Patent Number 4,773,731).

Kurematsu discloses (claims 1, 15, 28 and 33) a display device (30) comprising a lens system (2) to project an image, a substantially planar back plate mirror (20) to reflect the image to the Fresnel lens (12, 13, see Figure 4), the back plate mirror (20) substantially parallel to the Fresnel lens (12, 13, see Figure 4); and a substantially planar intermediate mirror (21) to reflect the image projected by the lens system (2) to the back plate mirror (20), the intermediate mirror (21) being substantially parallel to the back plate mirror (20), wherein the intermediate mirror (21) is substantially perpendicular to the optic axis of the lens system (2); (claim 29) wherein the screen (1) is a Fresnel lens (12, 13).

Kurematsu teaches the salient features of the present invention, except (claim 1) a Fresnel lens having a plurality of bumps on an output side of the Fresnel lens; (claims 2 and 5) wherein at least one of the plurality of bumps has a different size than another one of the plurality of bumps; (claim 3) wherein each of the plurality of bumps has a different size; (claims 4, 7 and 11) wherein the plurality of bumps is randomly distributed over the output side of the Fresnel lens; (claim 6) wherein each of the plurality of bumps has a different shape; (claim 8) wherein the plurality of bumps are of unitary construction with the Fresnel lens; (claim 9) wherein the Fresnel lens includes a diffuser to diffuse stray light that passes through the Fresnel lens; (claims 10 and 32) wherein the diffuser is of unitary construction with the Fresnel lens; (claim 12) wherein the

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plurality of bumps comprises a plurality of lenticular bumps; (claim 13) wherein the plurality of lenticular bumps are affixed to the output side of the Fresnel lens; (claim 14) wherein the plurality of lenticular bumps are of unitary construction with the Fresnel lens; (claim 15) the Fresnel lens having an output ray angle of substantially zero near a center of the Fresnel lens and an output ray angle whose magnitude increases as a radial distance (R) from the center increases; (claim 28) a screen having a diffusion layer; (claim 30) wherein the diffusion layer is affixed to an output side of the Fresnel lens; (claim 31) wherein the diffusion layer is laminated to the output side of the Fresnel lens; (claim 33) where the Fresnel lens has a plurality of bumps adapted to scatter stray light. However, Kurematsu discloses a screen (1) comprising a Fresnel lens (12, 13).

Goldenberg et al. discloses a Fresnel lens (302, 310) having a plurality of bumps (320, 322) on an output side (i.e. right side) of the Fresnel lens (310); wherein at least one of the plurality of bumps (320) has a different size than another one of the plurality of bumps (322); wherein each of the plurality of bumps (320, 322) has a different size (see Figure 3); wherein the plurality of bumps (320, 322) is randomly distributed over the output side (i.e. right side) of the Fresnel lens (310); wherein each of the plurality of bumps (320, 322) has a different shape (see Figure 3); wherein the plurality of bumps (320, 322) are of unitary construction (300) with the Fresnel lens (310); wherein the Fresnel lens (310) includes a diffuser (316) to diffuse stray light (column 4, lines 60-63) that passes through the Fresnel lens (310); wherein the diffuser (316) is of unitary construction (see Figure 3) with the Fresnel lens (310); wherein the plurality of bumps comprises a plurality of lenticular bumps (column 2, lines 12-16); wherein the plurality of

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lenticular bumps (320, 322) are affixed to the output side (i.e. right side) of the Fresnel lens (310); wherein the plurality of lenticular bumps (320, 322) are of unitary construction (300) with the Fresnel lens (310); the Fresnel lens having an output ray angle of substantially zero near a center of the Fresnel lens and an output ray angle whose magnitude increases as a radial distance (R) from the center increases (see equation 6); a screen (300) having a diffusion layer (316); wherein the diffusion layer (316) is affixed to an output side (i.e. right side) of the Fresnel lens (310); wherein the diffusion layer (316) is laminated to the output side (i.e. right side) of the Fresnel lens (310); where the Fresnel lens has a plurality of bumps adapted to scatter stray light (column 2, lines 12-20).

It would have been obvious to one of ordinary skill in the art at the time of the invention was made to utilize the screen comprising a Fresnel lens having a diffusing layer and a plurality of bumps as disclosed by Goldenberg et al. in combination with Kurematsu's invention, for the purpose of having a projection screen without corner illumination deficiencies (column 1, lines 31-33).

Allowable Subject Matter

6. Claims 19-27 are allowed.
7. The following is a statement of reasons for the indication of allowable subject matter:

A Fresnel lens having a screen diagonal D and a focal distance L as a distance between the Fresnel lens and a projection lens, wherein a ratio of D to L is greater than 3.0 (claim 19) cannot be made inherent or obvious by the prior art of record.

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Park (US Patent Number 4,979,801) discloses a rear projection screen having a first sheet formed with a Fresnel lens and a second sheet having lenticles.

Miyata (US Patent Number 6,400,504 B2) teaches a rear projection screen including lens sheets or optical sheets having an optical function of condensing or diffusing light.

Peterson et al. (US 6,804,055 B2) shows a Fresnel lens for use with a rear projection display.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Magda Cruz whose telephone number is (571) 272-2114. The examiner can normally be reached on Monday through Thursday 8:00-5:30 PM.

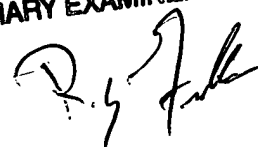
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Judy Nguyen can be reached on (571) 272-2258. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Magda Cruz
Patent Examiner
February 1, 2005

RODNEY FULLER
PRIMARY EXAMINER

A handwritten signature in black ink, appearing to read 'R. Fuller', is written over the printed name of the examiner.